

MEMORANDUM

DATE: February 24, 2010

TO: Policy Committee

FROM: Ellen Cook, Senior Planner II
Sarah Propst, Planner

SUBJECT: Green Building

I. Introduction

Green building and design is the practice of creating and using resource-efficient models of construction, renovation, operation, maintenance and demolition. Green building focuses on sustainable site planning and design, safeguarding water resources and promoting water efficiency, energy efficiency and renewable energy, conservation of materials and resources, and indoor environmental quality. When viewed on a regional scale, green building and design includes the interconnectivity of neighborhoods and communities, alternative forms of transportation, and preservation of natural resources. Investigating application of green building principles in James City County was included in the Ordinance update methodology.

II. History

A Green Building Design Roundtable stakeholder group met from March 2009 to June 2010. Among other activities, the Roundtable researched the methods other localities are using to encourage or require the use of green building techniques for private development in their communities. The Roundtable created a report with recommendations which was adopted by the Board of Supervisors at its July 27, 2010, meeting. The report contains two major directions for ordinances and policies as they apply to land development. First, the report recommends that for rezoning or SUP projects that involve a building over a certain size (for instance, 10,000 square feet), EarthCraft or LEED certification, or an equivalent certification, is justified and should be expected. Second, the report also recommends that for development that doesn't require legislative approval, the best approach is to encourage, rather than mandate, sustainable development by the use of incentives, education, and a positive example set by the County in the development of public projects. To this end, the Roundtable report includes an appendix listing possible methods to encourage sustainable development. The Roundtable report will be provided to the Policy Committee electronically and will also be posted on the Ordinance update webpage materials section at: <http://www.jccplans.org/schedule.html>.

III. Board Direction, Comprehensive Plan Goals, Strategies and Actions, public input, Sustainability Audit

- The Board adopted a policy for public facilities on March 23, 2010.
- The Green Building Roundtable Report presented to the Board is summarized in the History section above.
- At the Ordinance update kick-off work session on August 10, 2010, the Board generally expressed support for green building concepts, and discussed voluntary versus mandatory requirements.
- Several speakers made comments on Green Matters at the Planning Commission forums, including Robert Duckett of the Peninsula Housing and Builders Association (his comments were primarily in relation to the Residential sections) on September 1, and Susan Gaston of the Williamsburg Area Association of Realtors on September 27. Their remarks can be found at: <http://www.jccplans.org/what.html>.

- The 2009 Comprehensive Plan's Residential Development Standards includes adhering to green building guidelines, such as LEED (Leadership in Energy and Environmental Design), EarthCraft, or successor or equivalent as an element of enhanced environmental protection.
- The Sustainability Audit encourages addressing use of green construction and technology, efficient provision and use of energy, and reduction in waste in the ordinance.

IV. Discussion Items

The items below discuss not only thresholds (size, use, etc.) for application of green building techniques, but also a number of related issues, such as certification types, verification, exemptions, program/policy administration, and enforcement.

A. How Can the County Verify that Green Techniques Have Been Used?

A number of programs have been developed over the years that have put together a standard set of green building practices, while allowing for customization and innovation. The most prominent among these programs is LEED (Leadership in Energy and Environmental Design). (Page 7 of the Roundtable report discusses other programs such as the NAHB's Model Green Homebuilding Guidelines.) LEED is a comprehensive green building program (covering energy efficiency, water conservation, etc., and a wide range of construction types¹), while other programs focus on certain aspects of green building such as energy efficiency (such as Energy Star) or are developed for specific construction types (such as schools or laboratories). Based on the research and discussion of the group, the Roundtable recommended use of two programs – LEED and EarthCraft. Subsequent review of localities further supports the Roundtable's recommendations, as many localities use LEED or a LEED-based system as the primary benchmarking green building program in their communities. Including EarthCraft as a second benchmark program complements LEED, as the EarthCraft focus is on residential units, and the EarthCraft program has been used locally for Office of Housing and Community Development projects and other projects, thus creating a certain level of local expertise.

While using these programs as the primary benchmarking programs, it may be reasonable to make provisions for developers to use other equivalent programs, subject to Planning Director consideration and approval on a case-by-case basis. In addition, given that development of programs in this field is active and on-going, it may be reasonable to make provisions for examining and reconsidering the primary benchmark programs on a semi-annual or other reasonably frequent basis to allow for changes or additions to the Policy.

Staff Recommendation:

Use LEED and EarthCraft as the County's primary benchmark programs, with provisions for use of equivalent programs.

B. Should the County Look for Actual Program Certification or Verify Checklist Points Itself?

Green building programs such as LEED and EarthCraft are set up as a checklist of practices in a set of categories, each of which is noted as either a prerequisite/required item or an optional item, and each of which has a point value associated with it. Obtaining basic (i.e. "Certified" level) or higher levels of certification entails carrying

¹ There are specialized LEED programs for each of the following: new construction (which includes high-rise residential buildings); existing buildings: operation and maintenance; commercial interiors; core & shell; retail; healthcare; homes (which includes single family units through mid-rise multi-family, and can include mixed-use buildings with at least 40 – 60% residential floor space); and neighborhood development.

out the prerequisites/required items and accumulating points from enough of the other practices to reach a specified threshold. Obtaining certification also means registering with the program, paying the program fee(s), submitting the documentation paperwork, and completing any required inspections.

Some localities have opted to use the checklist of a program such as LEED, but not require actual certification. This potentially allows for the program fee and program documentation process to be eliminated and/or for the locality to adjust, if desired, which items are prerequisites/required. These could be viewed in a positive light, so it is worth examining the implications for both the fee and program documentation aspect, and prerequisite adjustment aspect.

With regard to fees and program documentation, staff has been able to identify the following information:

- **EarthCraft** - The EarthCraft program fee for certification of a home is \$950. (If the home is over 3,000 square feet, there is an additional fee of \$0.15 per square foot.) This fee covers everything, including design review, energy modeling, technical assistance, site inspections by the local private-section inspector affiliated with EarthCraft, and final testing. The fee does not depend on the level of certification that is being pursued, and there can be discounts for townhouses or identical models; this discount would be negotiated on an individual project basis.
- **LEED for New Construction** - The registration fee is \$900 for members or \$1,200 for non-members. The certification fee depends on the size of the structure, the desired review type (separate or combined design and construction reviews), whether the developer is a member, and whether expedited review is sought. For example, for a member seeking certification of a building less than 50,000 square feet with combined design and construction review on a non-expedited time frame, the fee would be \$2,250.
- **LEED for Homes** - For single family homes, the member fees are \$150 for registration and \$225 for certification. However, LEED for Homes requires completion of on-site inspections prior to certification, so additional LEED Provider verification costs would apply.

If actual certification is not required, it means that the responsibility of verifying compliance with the checklist falls to the County. From the research that staff has done, other localities that have pursued this route appear to have dedicated green building program staff to review documentation and meet with applicants, and dedicated green building inspection staff to conduct inspections. Planning staff has reviewed the EarthCraft checklist with Code Compliance and Environmental Division staff to determine which, if any, items are currently inspected by their staff as part of their existing duties². This review indicated that inspection of many of the prerequisite/required items is not part of their current duties, and that many of the credit/optional items which allow for developer customization and flexibility are also not part of current duties. This indicates that County verification using the EarthCraft checklist would not be possible without additional resources.

Some localities have eliminated certain items as prerequisite or required items. One example of a LEED prerequisite which has been eliminated by a locality is the commissioning aspect (LEED Energy and Atmosphere Prerequisite #1). Building commissioning verifies that the project's energy-related systems are installed and calibrated to perform according to the owner's project requirements, basis of design and construction documents. Benefits of commissioning include reduced energy use, lower operating costs, fewer contractor callbacks, better building documentation, improved occupant productivity and verification that the systems perform in accordance with the owner's project requirements. However, as a downside from a cost and process

² Note that in many localities where the building inspection staff serves to verify compliance, the green building program has been inserted in the local building code. Local adjustment of the building code is not an option in Virginia.

standpoint, for buildings over 50,000 square feet, it does mean that a commissioning authority separate from the design and construction team must be hired. If prerequisite items are altered, it automatically means that compliance verification fall to the locality. In addition, adapting the checklist to decide if some of the prerequisites should be removed would likely mean a time and work-intensive process, and could result in building outcomes that provide less community benefit and potentially less investment payback. Since both LEED and EarthCraft are time-tested and established programs, it seems reasonable that items they indicate as prerequisites/required serve a fundamental purpose in achieving green building goals. Staff would note that a number of legislative projects in James City County, even in the absence of a policy, have proposed certification by LEED or EarthCraft (examples include Stonehouse Amenity Center, Premium Outlets expansion, and Candle Factory Food Lion).

Staff Recommendation

In concurrence with the Roundtable report, staff recommends that actual program certification be the expected County standard, given the desire for verification of the practices committed to by the developer and given current resources.

C. Three Interrelated Issues: Level of Certification, Sizes or Percent of Development, and Expected versus Incentivized.

The Roundtable report recommends that basic certification be expected for buildings over a certain size, citing 10,000 square feet. (The Roundtable report did not specify a recommendation for number or percent of residential units.) The report also recommends that for other development, the best approach is to encourage, rather than mandate, sustainable development by the use of incentives, education, and a positive example set by James City County in the development of public projects. Achieving green building certification requires additional effort to plan and document and some up-front additional cost (both for program administrative fees and for the actual design, materials and construction). Given this, staff investigated how this recommendation compared to other programs. Staff found that the policies or ordinances adopted by localities across the country vary fairly widely in terms of these three elements:

- **Level of Certification** - The LEED program has Certified, Silver, Gold and Platinum levels. The EarthCraft Program has Certified, Gold and Platinum levels. Attaining higher levels means expending additional effort and potentially additional cost. Many localities set the standard at Certified for private development, while in other localities, the level depended on the two factors below. (The James City County policy for public facilities specifies LEED Silver as the general standard.)
- **Size of Structure/% of Development** - While many localities require adherence to their green building program for all new construction, many others specify buildings over a certain size. Some localities also link building size to achieving certain certification levels (for example, buildings between 5,000 and 50,000 square feet should achieve LEED Certified, and buildings between 50,000 and 100,000 should achieve LEED Silver, etc.). In terms of residential, a decision would need to be made about whether certification expectations would apply to all units or a certain percentage/number of the units.
- **Expected versus Incentivized** - In some localities (such as Arlington County, VA), adherence to their green building program is expected or required, either generally, or in circumstances where a special type of approval or exception is sought by a developer. In other localities (such as Gainesville, FL) , adherence to a green building program is linked to incentives such as density/floor area ratio bonuses, expedited review of plans or permits, or waiver of review fees. Some localities expect/require adherence for a basic level (such as LEED Certified) for most development, but provide incentives for higher levels of certification.

Staff Recommendation

In concurrence with the Roundtable report, staff recommends expecting by policy that rezoned or specially-permitted buildings over 10,000 square feet application achieve green building certification at the basic certified level. In terms of residential development, the Roundtable did not specify a level of development for which the certification standard would apply. Staff has also not been able to find much information to date on how this is treated in other localities. Therefore, at this time, staff is making a preliminary recommendation that the policy expectation be achieving basic level certification for 35% of homes within proposed developments. Staff also preliminarily recommends that this apply to major subdivisions (developments of greater than 9 lots). In addition, staff recommends including opportunities in the ordinance to incentivize higher certification levels (Silver, Gold, etc.), such as density bonus provisions in the Cluster Overlay District, and/or for development that would otherwise be below the Policy threshold. Finally, staff recommends investigating ways to provide recognition to individuals and companies that achieve certification; one possibility would be to present resolutions of recognition at Board of Supervisors meetings.

D. Administration/Enforcement

With any policy or regulation the question of administration and enforcement is important to ensure that the envisioned goals are met. In the case of green building, the questions are how to ensure that compliance is achieved, what time period to allow for demonstration of compliance, and how to address situations of non-compliance. It is important to note that there is a high level of ability to achieve certification once the commitment is made for the project. EarthCraft Virginia staff stated that of the 702 homes that have been registered with them (i.e., the builder/developer indicated that they would be seeking certification), 700 were able to complete the process and achieve certification. While this is very encouraging, it still seems prudent to have a process in place and to provide for circumstances if some problem were to occur.

Based on a review of other localities, staff recommends a process that seeks to keep compliance on track as the project moves along. Such a process could entail the following steps:

- Turn in proof of registration and checklist indicating items to be pursued during site or subdivision plan review.
- Update/verify the checklist during building permit review.
- For EarthCraft, the certification is issued once final tests are done prior to Certificate of Occupancy (CO), so proof of certification within one month of CO seems feasible.
- For LEED, the system requires commissioning which can mean extended timelines beyond CO, and certification processing time can take longer. In other localities that have been surveyed, staff has seen time periods of 6, 12 and 18 months post-CO for producing proof of certification. It may be reasonable to choose 12 months and evaluate after a year or two to see if this proves reasonable. It also seems prudent to include a provision for extending proof of certification past the specified time period, if there is good reason and with the approval of the Planning Director.
- For other programs as approved by Planning Director, a decision on the timeframe could be approved by the Planning Director prior to site or subdivision plan approval.

As noted above, it is unlikely that once registered, a project would “default” on its certification commitment within the specified time period; however, should this occur, an enforcement provision would need to be in place. Strategies used in other localities include the following:

- Holding the project at temporary CO and not issuing final CO until certification is complete (this could be used to address situations where the specified time period commitment was not yet met);
- Giving authority to the Planning Director to have the developer/builder pursue other/additional program credits instead of those it did not complete; or

- Requiring up-front contribution to a green building fund that is refunded or forfeited depending on the certification outcome (forfeited funds would be used for green building education or projects);
- Pursuing civil/criminal penalties (generally associated with instances where the green building language was a part of the local building code).

A combination of these approaches, such as the ability to require a developer to pursue alternate credits prior to actual forfeiture of a green building fund contribution, may be worthwhile. Planning staff has consulted with the Attorney's Office, and the preliminary determination was that such a green building fund process could be legally feasible for the County.

Staff Recommendation

Staff recommends including certification process and timeframe information in the policy, as well as provisions for enforcement should it become necessary. Staff welcomes any input on the suggestions listed above.

E. Exemption of Certain Types of Development

There may be certain uses that could be exempt from the general policy. Similar to the County's Sustainable Building Policy, examples could include:

- Buildings without any climate-control systems, due to the smaller impact that buildings would have.
- Businesses that are lessees in spaces of less than 8,000 square feet gross floor area. While there is a LEED system that is designed to apply to leased space (LEED for Commercial Interiors), it may be reasonable to set a separate minimum size for these situations.

One other item that could be considered is instances of proffered affordable housing. The concern might be raised that the additional up-front costs of green building would impact the developer's ability to offer units at affordable prices. While acknowledging this concern, there have been a number of instances in the County where the two elements have been combined. On the private side, Health-E Communities has included green building elements in their proffers for a number of developments that included affordable units, including Michelle Point and Pocahontas Square. On the public side, units in the Office of Housing and Community Development's Ironbound Square redevelopment project have been both affordable and EarthCraft-certified. From the point of view of long-term affordability for the homeowners, use of green building techniques can assist in keeping energy and other bills minimized.

Staff Recommendation

Staff recommends including certain limited exemptions in the policy, such as the two categories listed above. Staff does not recommend including affordable housing units in the exempt category.

F. Certification that Includes Specification of Certain Checklist Items

Some localities specify that as part of meeting the certification, one or more of the certification program's elements must be selected for completion (as opposed to being an option). This essentially creates additional local-level prerequisite/required items on the checklist. Staff has discerned that this has been done in response to certain issues identified as critical at the local level. For example, in an area where landfill space has been identified as a specific concern, the locality may specify that construction waste management is a required element, whereas under the LEED program it is one of several options a developer could pick in the "Materials and Resources" category. Selection of certain local-level required elements could be a possibility for inclusion in a James City County green building policy.

Staff Recommendation

While this approach has the advantage of tailoring national or Virginia-wide system to suit specific local goals, staff does not recommend pursuing this approach at this time. Given that the policy would be a new instrument

in the County, the greatest degree of flexibility in meeting the certification target would likely be useful to developers and builders. Specifying certain local-level prerequisites could be added at a later date once additional experience has been gained by all parties, and if it appeared to be warranted.

G. Development that Falls Outside the Certification Triggers Discussed in Item C Above

One option that may be worth considering is to require meeting a lesser standard for development that falls outside the triggers that are selected for the expectation of certification. For example, it may be desirable to look for all new legislatively-approved homes to earn an Energy Star rating through the Energy Star program, which is a verified process that results in homes 20 – 30% more energy efficient than standard homes. There is also an EnergyStar energy performance target system that has been developed for certain commercial building types. Note that the EnergyStar program is solely related to energy conservation, and does not cover the other categories that the green building certification programs cover (sustainable sites, water conservation, materials and resources, indoor air quality, etc.). However, there could still be energy conservation benefits that would be beneficial to the community and potentially provide cost savings to building owners.

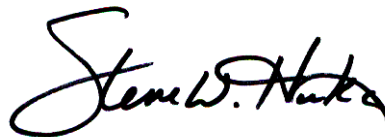
Staff Recommendation

Staff recommends investigating inclusion of an Energy Star expectation in the policy for development that falls outside the certification triggers discussed in item C above.

V. Conclusion

Based on the framework provided by the Roundtable report, staff's research, and input provided at various stages of the update process, staff recommends development of a Policy that sets forth size/percent thresholds for certification and provides guidance on administration, enforcement, exemptions, and other relevant matters as discussed above. Staff also recommends investigating use of incentives in various sections of the ordinance (Cluster, Mixed Use, etc.) for achieving higher levels of certification and/or for development that would otherwise be below the Policy threshold. Staff requests Policy Committee feedback on the information and staff recommendations discussed above, particularly items C and D, which are two of the most central issues moving forward.

CONCUR:



Attachment

1. Green Building Design Roundtable Report